

**DEPARTMENT of INDUSTRIAL ENGINEERING
COURSE CATALOGUE FORM**



Course Code: INDE4484				Course Title: Decision Support System			
Semester	L + R + L	Credits	AKTS	Language	Category	Instructional Methods	Prerequisites
7	3 + 0 + 0	3	6	English	Elective	Lecture	INDE2001
Course Objectives			Gaining the skills to implement decision support systems including optimization that can be used in industrial engineering applications.				
Course Content			Introduction to the concepts of decision support systems. Applications of decision support systems in industrial engineering. Developing and implementing decision support systems using popular database management and spreadsheet software. Microsoft Excel. Visual Basic for Applications. Project.				
Course Learning Outcomes			<p>Upon successful completion of the course, the student is able to:</p> <ol style="list-style-type: none"> 1. Develop a DSS that can solve an IE-related problem. [2] 2. Identify real life problems. [2] 3. Solve real life problems. [2] 4. Use MS Excel, VBA and optimization program. [2] <p>[Note: Numbers in brackets are indicating the related program outcomes]</p>				
ISCED Category of the course			52 Engineering				
Textbook			-				
Supplementary Material			<i>Developing Spreadsheet-Based Decision Support Systems.</i> Serif, Ahuja and Winston.				

COURSE PLAN

Week	Topics	Laboratory / Tutorial Work
1	Introduction to the concepts of decision support systems	-
2	Application examples of decision support system	-
3	Application examples of decision support system	-
4	Advanced Excel (Excel Solver)	-
5	Advanced Excel (Statistics functions, filtering)	-
6	Simulation with Excel VBA	-
7	Simulation with Excel VBA	-
8	Optimization with Excel VBA	-
9	Optimization with Excel VBA	-
10	Database concepts	-
11	MS Access, queries with SQL	-
12	Advanced Excel (summary tables)	-
13	Project presentations	-
14	Project presentations	-

COURSE ASSESSMENT SYSTEM

	Activities	Contribution (%)
Semester Activities	Semester Written Exams	20
	Homework	25
	Reports	
	Labs	
	Seminars	
	Presentations	
	Term Project	30
	Other (attendance, field trip etc.)	5
FINAL EXAM		20
Total		100

CONTRIBUTION of the COURSE on INDUSTRIAL ENGINEERING PROGRAM OUTCOMES

	Program Outcomes	Low	High
1	Adequate knowledge in mathematics, science and subjects pertaining to Industrial Engineering; ability to use theoretical and applied knowledge in these areas in complex engineering problems.		
2	Ability to identify, formulate, and solve complex Industrial Engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.		X
3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.		
4	Ability to devise, select, and use modern techniques and tools needed for analyzing and solving problems encountered in engineering practice; ability to employ information technologies effectively.		
5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions.		
6	Ability to work efficiently individually and in intra-disciplinary / multi-disciplinary teams.		
7	Knowledge of Turkish and English languages; ability to communicate effectively orally, inscriptive and visually by using these languages (via business methods such as reports, presentations and instructions).		
8	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.		
9	Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice.		
10	Knowledge about business life practices (management activities such as project, risk, change and quality etc.); awareness in entrepreneurship, innovation; knowledge about sustainable development.		
11	Knowledge about the global and social effects of engineering practices on health, environment, economics and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.		

ECTS-WORK LOAD TABLE

COURSE ACTIVITIES	Quantity	Time (hr)	Work Load (hr)
Lectures	14	3	42
Final Exam (Preparation included)	1	20	20
Semester Written Exams (Preparation included)	1	15	15
Out of class study time			
Homework	14	2	28
Reports	1	8	8
Labs			
Seminar			
Presentations	1	3	3
Term Project	1	25	25
Total Load (hr)			141
ECTS Credits of the course (Total Work Load / 25)			6

Revision/Date 5/02/2020	Coordinator / Prepared By Seda Bař Güre	Approved By Çağlar Aksezer
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